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SURVEY OF SOVIET HEAVY INDUSTRY (8)

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### SURVEY OF SOVIET HEAVY INDUSTRY (8)

This is a series report published approximately bi-weekly, which contains items of interest on Soviet heavy industry as reflected in articles, short news items, announcements, etc., appearing in various USSR publications. The items contained in this report fall under the broad categories listed below in the table of contents.

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## MACHINE TOOLS

### Specialized Universal Parts Production

During the years of the existence of our state we employees of industry have learned much and have graduated from the great school of economy. But we still have much to do in order to eliminate the great losses which still prevail in production.

Economy is not only a struggle for decreasing production cost and not only a decrease of non-productive expenditures and improvement in the work-day schedule.

A good boss is required to seek new possibilities at all times in order to increase the production and technical level of production and see that production require less and less labor expenditure. Economy in social labor is definitely leading to a considerable decrease in the cost of production.

The Twenty-first Party Congress indicated that one of the most important conditions for successful fulfillment of the tasks of the Seven-year Plan is the further development of specialization and cooperation in all branches

### Specialized Universal Parts Production (cont'd)

of the national economy. The great reserve of social labor can be found here.

No other country in the world has such concentrated and highly developed specialized branches of machinery construction. But right now, on the new stage of sharp improvement in our industry, we must take the following step: we must develop specialization of production not only of machines but also of individual components and parts which are used in large quantities. Here lie the truly inexhaustable possibilities for speeding up and lowering the costs of production.

Specialization is now occupying the front position in the battle for technological progress. During the past six months alone the government has made many important and basic decisions on organizing a specialized production of compressors, refrigerating machinery, reduction gears, chain drive, iron and steel castings.

The tremendous importance of these documents and new technological decisions can be proved by the following example: last year 126 plants and 52 economic administra-

### Specialized Universal Parts Production (cont'd)

tive regions were engaged in producing reduction gears, this widely used component parts. 160,000 ordinary reduction gears were produced, and 57 of the plants produced reduction gears in quantities of 1,000 or less units per year. Naturally, with such fractioning up and technology and production organization were on a low level.

According to a government decree, 116 plants are being freed from the production of standard reduction gears. Production will be concentrated in 10 specialized plants and shops which will produce 215 times as many reduction gears in 1965 as were produced at 126 plants.

With such a mass production it becomes economical to organize the production of reduction gear parts on automated lines and to use highly productive special machine tools. All capital expenditures connected with this will be amortized in less than a year. The effectiveness of the specialization of reduction gear construction can be seen in the following figures: the actual yearly savings will be about 350,000,000 rubles.

Specialization will have a favorable influence on

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### Specialized Universal Parts Production (cont'd)

deciding the problems of complex automation. With this goal in mind, it is necessary to rapidly incorporate automated production lines. But if they are planned and set up with special machine tools, each line will require 3-4 years. This would pay only for mass production and extremely stable items.

What is to be done if production is continually being perfected? In those branches of machinery construction where production is small, it is obviously not economical to set up complex automated production lines.

Not long ago we were not equipped with technical solutions to this extremely vital problem. But these solutions have now been found. It is necessary to build equipment which can be quickly re-set up for producing various types of components and parts. They are already under construction.

Specialized aggregate machine tools which are constructed from individual universal elements -- such as bed plates, stanchions, power heads, revolving surfaces, replaceable spindles, claw attachments, universal loading mechanisms, etc., are coming more and more into use.

### Specialized Universal Parts Production (cont'd)

Soviet machinery construction has grown to such an extent that we can already pose new questions on machinery designing, as well as shortening the time of producing the new equipment. This will insure an even more rapid development of technological progress. Each group of machines has a great quantity of identical and repeated parts and even whole components. Our leading scientific-research and design organizations should start to pay serious attention to universalizing these parts. Only a small portion of the components and parts -- that section which gives the machine a completely different potential -- should be new and original.

The group of mass items which must be rapidly shifted into specialized production includes bearings, couplings and sleeves of various types, spline shafts, bushings, packing, springs, and pneumatic and hydraulic drive parts and components.

The most important problem in machinery construction is without a doubt the organization of centralized production of tool and technological supply. It has already be-

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### Specialized Universal Parts Production (cont'd)

come the practice for each machinery construction plant, even comparably small ones, to attempt to organize their own tool base and be independent. This type of narrow-minded localness is very expensive to the state. This fractioning up of tool and technological equipment production among numerous machinery construction plants is leading to a situation where these plants are operating on obsolete technology and are causing double and triple expenses which would be avoided with mass production at specialized plants.

Taps, for example, cost 3 rubles 45 kopecks. But even at such a large enterprise as the Krasnyy Proletariy they cost over 12 rubles, and at Kompressor -- 24 rubles and 28 kopecks. This situation is repeated for all tools.

Because of this fractioning of tool production we are losing at least 3½ billion rubles a year. In addition, as a result of this unjustified high labor consumption in producing equipment, technological preparation of production and introduction of mass production of new types of machinery and equipment are being drawn out. This type

Specialized Universal Parts Production (cont'd)

of process lasts sometimes 3-4 and more years.

When a plant begins to replace one type of machine by another improved model, almost the entire equipment is usually discarded and everything is begun from scratch. The unsatisfactory development of production of punches, press forms, and diamond tools is also hindering the introduction of modern technological processes.

The USSR Gosplan, the USSR Council of Ministers State Committee for Automation and Machinery Construction, and the Committee on Standards, Measures, and Measuring Instruments of the USSR Council of Ministers have worked out measures for organizing, in 1961-1965, the specialized production of instruments and technological equipment. This is a carefully thought out program, the fulfillment of which will allow savings of at least 6,000,000 rubles during the last year of the Seven-year Plan. This is something to work on, something to fight for.

The chief problem is that of production volume. In comparison with the control figures they will be increased by more than 2 times. An entirely new basis will be

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Specialized Universal Parts Production (cont'd)

used for organizing the production of technological equipment. The Seven-year Plan provided for 1965 production of centrally produced punches and press forms to be 75,000,000 rubles, while there was not even talk of auxiliary tools. Now a new figure has been established, that of 1.6 billion rubles.

This tremendous increase in tool and technological equipment production will demand large sums of money. But they will be found. Expenditures on construction and expansion of tool shops and industrial enterprises will be decreased, and capital investments will be re-distributed. We should also consider the fact that all capital expenditures on the organization of specialized production of tools and technological equipment will be amortized in less than a year. The great strides made by the organization of specialized tool and technological equipment production is creating the firm belief that this task will be fully carried out. (Ekonomicheskaya Gazeta, 27 July 1960. Full translation).

## VEHICLES

### Plant Specialization

Not long ago the L'vov Sovnarkhoz, together with the L'vov and Volynya Oblast' Party Committees undertook the task of specializing for enterprises of the motor vehicle industry. It was decided that the best plant would produce only busses of various types, the auto-loader plant -- loading-unloading and hydraulic life-machines, the Metall Plant -- motorbikes, and the Lutskiy Plant -- truck bodies.

Thanks to this specialization, the possibility has opened up to review the planned capacities of these enterprises within the limits of planned capital investment and secure an above plan production of 300,000,000 rubles. (Izvestiya, 10 November 1960. Partial translation).

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## PUMPS AND COMPRESSORS

### Compressor Plant Growth

Production at the Chitinsk Machinery Construction Plant will increase at least 30% by the end of the year. The growth of this plant is very interesting. A few years ago this was an extremely backward enterprise. The Sovnarkhoz lent a hand. Since last year particularly intensive technological reconstruction of the enterprise has taken place. More than 100 units of new technological equipment has been set up, and assembly lines have been introduced. Parts production has been mechanized as has the transfer to the assembly line. As a result of these measures, production of compressors has doubled and production of refrigeration equipment for the food and fishing industries have increased more than 4 times, with no increase in plant space. By the end of the Seven-year Plan, the plant will double gross production. (Ekonomicheskaya Gazeta, 10 August 1960. Full translation).

### New Pumps

The modern mine is unthinkable without powerful and reliable equipment for pumping out water. Many high-pressure pumps have already been built for this purpose. By the end of the Seven-year Plan production will increase significantly. In carrying out this task, a large role is being played by the collective of the Specialized Laptev Machine Construction Plant. By the end of 1965 the pump production here will increase by more than 3 times. Several high-pressure sectional pumps for coal mines will be designed and produced. These are unique and highly economical mechanisms which will allow us to do away with graduated water removal and will save tens of millions of rubles at enterprises which are now under construction.

The Laptev Plant is also producing pumps for the ore mining and petroleum industries, for railroads and shipyards. The pumps from this plant are famous not only in the Soviet Union but in other countries.

Many mechanisms are better than the best foreign brands. For example, the 6MS-6 and 8MS-7 pumps are successively competing on the world market with the products

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### New Pumps (cont'd)

of such foreign firms as Jaeder, Vogel, and Wolfpampen (West Germany), Bingham, Byron-Jackson, and Pacific (USA), and Dibault (France). The Laptev pumps used less energy, are better constructed, and operated more efficiently.

The plant collective is working on the creation of even more perfected mechanisms. During the days of preparation for the July Plenum of the Central Committee of the CPSU, the plant stopped production on the old KOM and started mass production of the MS-pump, the useful action co-efficient of which is ten to 15 per cent higher, and the weight of which is one-third of the old model. This change will have a great effect in savings. 25,000,000 rubles less will be spent for electricity, 4,000 tons of metal will be saved for other purposes. Right now the collective is preparing to replace other obsolete models with new type pumps.

New pumps are being designed for the coal industry. The new pumps which are produced by the deadline in the plant are not put into operation. Therefore, there is often no possibility of adjusting these machines and taking advan-

New Pumps (cont'd)

tage of the tests under actual use conditions for improving the subsequent models. Here are some examples. Two years ago the plant designed a unique centrifugal pump. Its capacity was 300 cubic meters per hour with a pressure of 1200 meters of vertical pumping capacity. The RPM rate was 2950 per minute. This type of pump is extremely useful in the coal industry for pumping water from deep shafts. It could also be used in hydro-shafts. However, the problem of production has not yet been solved. The RSFSR Gosplan and the Rosglavelektrosbyt have spent two years without being able to find a supplier of 1600 kilowatt electric motors, since the electro-technical industry has stubbornly refused to produce this.

When the motor was finally obtained a new obstacle arose. The coal-combines don't want to test pumps. They say that this hinders plan fulfillment. This type of case is not unique. Since the beginning of last year new types of pumps, the MS-100-150, with a pressure of 550 and 720 meters have been lying around in the Stalinugol' and Donbassanteratsit Combines. In spite of numerous reminders, re-

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New Pumps (cont'd)

quests, and demands these mechanisms have not yet been tested. (Ekonomicheskaya Gazeta, 19 August 1960. Partial translation).

## ELECTRICAL POWER EQUIPMENT

### New Steam Turbine

The Khar'kov Plant imeni Kirova has designed and started construction of the country's first SKR-100 unique steam turbine. It is designed for parameters unheard of up to now, steam pressure of 300 atmospheres, which is more than 3 times that in condensation machines of identical capacity at a temperature of 650 degrees. Fuel economy at the electric power station will amount to 24%.

The chief designer of the turbine plant, corresponding member of the Ukrainian Academy of Sciences, L. A. Shubenko-Shubin informed our Tass correspondent "we have all the reason in the world to expect that the perfection and testing done on the SKR-100 turbine will soon allow us to produce more economical aggregates with the capacity of 500-800 thousand kilowatts with super-critical parameters. (Izvestiya, 5 October 1960. Full translation).

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### New Turbines for the Kama

Ten turbines are being furnished by the Metalliche-skiy Plant for the Votkinskaya hydro-electric power station on the Kama River. Production was completed ahead of schedule by the enterprise collective for the sections of the Stators of these machines which are in the body of the dam itself. This ahead of schedule completion was one and one half years ago. Production has now started on the directional apparatus which automatically regulates the flow of water to the turbine blades. The first of these mechanism, which have a diameter of about 10 meters and is as high as a two-story building, has been shipped to the construction site.

By the end of the year 4 more directional units will be produced. This ahead of schedule delivery will shorten the time required to put the hydro-electric power station into operation. This station has been included among the shock-work construction projects of the Seven-year Plan. The designers at the enterprise have designed for the Votkinskaya hydro-electric power station a revolving blade

New Turbines for the Kama (cont'd)

hydro-turbine, which is similar in type and dimensions to the world's largest, on the Volga. With a 23.5 meter water pressure, this machine will be able to develop a capacity of about 100,000,000 kilowatts. (Leningradskaya Pravda, 30 August 1960. Full translation).

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SELF-PROPELLED MACHINERY

Giant Slag Machine

The designers of the Novo-Kramatorsk Plant have designed a self-propelled slag machine, the 4500-1800. It is much larger than similar machines both in size and productivity.

The slag machine works together with rotary power shovels with a capacity of 3000 cubic meters per hour. The giant "strives" together with the power shovels and, with help of a 180 meter cantilever, transports and dumps slag. The using of this machine will completely eliminate the belt-transporter system and will lower the costs of surface mining by 30-40%. (Ekonomicheskaya Gazeta, 27 August 1960. Full translation).

New All-Purpose Excavator

Extended tests of the new all-purpose rotary excavator have given excellent results. Last winter the UER-Excavator, in tests near the city of Kolomna, with a temperature of 30% below zero centigrades, worked on frozen soil. This amazing machine was tested recently in the Rostov Oblast'. Trenching was conducted in rocky soil (not monolithic, but schintouf) without preliminary breaking up. Until now this type of turraine has been trenched with dynamite.

The new machine can trench soft soil as well as frozen and extremely hard turraine up to a depth of 2.2 meters and a width 1.6-2.6 meters. The planned productivity of the machine is 1160 cubic meters per hour. The total weight of the excavator is 27.5 tons. The machine is equipped with a 150 hp diesel engine which is started with an electric generator. Therefore, all the mechanisms in the excavator operate from electric motors. The machine can also operate with an overhead electric system. The first test model of the UER-Excavator was built at the Moscow Experimental Mechanical Plant of the USSR Glavgaz. The commission making the

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New All-Purpose Excavator (cont'd)

tests is recommending that the USSR Glavgaz start production on these machines. (Ekonomicheskaya Gazeta, 27 August 1960. Partial translation).

### Giant Crane

Is it impossible to build a crane which can load itself onto a flat car and unload without the use of expensive auxiliary machinery? Yes, it is possible. The workers, engineers, and technicians of the Ramenskoye Mechanical Plant Glavstal'konstruktsiya have been successfully working on the production of this type of machine for years.

Since 1950 more than 200 cranes of various types, with 25 and 30 ton capacities have left the plant. The first machines were designed to be operated on a railroad track, that is, in order to operate them a spur line had to be built. Later the machinery constructors built caterpillar cranes which were easier to operate.

Hoist mechanisms with the Brand of the Ramenskoye Plant are operating on the construction site of the Bratsk Hydro-electric Power Station and at many steel mills in the Urals and in Siberia. They are also well-known in India. Five cranes have been sent to this country and are operating marvelously at the construction site of the Metallurgical Combine in the Bhipai.

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### Giant Crane (cont'd)

But all this is a thing of the past. Large block construction, building construction from sections as large as a room demanded the construction of a more powerful crane. And the task has been carried out. The giant crane has been produced by the plant collective. It is called SKG-50. It was designed in the Institute Glavstal'konstruktsiya. The Moscow Plant Dynamo imeni Kirova produced special electric motors for the crane, and one of the enterprises in Sverdlovsk -- the base-turning mechanism. Other plants supplied the castings. The crane weighs 90 tons. The length of the boom, together with its cantilever nose, reaches 69 meters. The machine has several booms from 15-40 meters long. The crane can lift 50 tons to a great height in one operation. The crane has its own 120 kilowatt electric power plant, which operates the electric motors of all winches and the mechanism which moves the crane. The speed of the crane on its caterpillar tread is 0.765 kilometers per hour. It turns on its axis in four minutes.

The new crane is a great improvement over present

### Giant Crane (cont'd)

ones by the new type operating cabin. It has sound-proofing and climate control. The control panel is operated by push buttons.

What are the results of the first stage of plant testing? The results are gratifying. The crane lifted 62.5 tons with its 15 meter boom. After state approval it will be sent to Moscow to one of the construction sites at the capitol. Soviet designers are now working on a more powerful crane, with a capacity of 75 tons. In all probability the Ramenskoye Collective will produce it. (Leninskoye Zn-amyá, 28 August 1960. Partial translation).

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## CHEMICAL INDUSTRY

### New Machinery for the Chemical Industry

The Soviet people are using more and more chemical products and synthetic materials in their daily lives. This year Soviet industry will produce 1½ times as much synthetic resins and plastics, 1.4 times as much chemical fiber and almost three times as much synthetic alcohol as in 1957. The chemical industry is making rapid advances.

This important branch of the national economy is impossible to build up without a well developed chemical machinery construction industry. After the May Plenum of the Central Committee of the CPSU, there has been much work in producing chemical equipment. Besides plan specializing in the production of chemical equipment, about 150 other machinery construction enterprises are taking part. In the first half of this year the chemical industry received 1039 million rubles of equipment, 54% more than during the same period last year.

New Machinery for the Chemical Industry (cont'd)

A tremendous army of scientists and designers are working on chemical equipment development in our country. In 1956-1960 many new scientific-research institutes and planning-design organizations were created. These include the scientific-research and design institute for machinery and equipment for processing plastics of the Kiev Sovnarkhoz, the design bureau for chemical machinery construction of the Tambovsk Sovnarkhoz, a branch of the All-Union Scientific-Research and Design Institute of Chemical Machinery Construction in Penza, etc.

But the machinery construction industry is not yet satisfying the demands made upon it by the rapidly growing chemical industry. This is explained, along with shortcomings in the work of enterprises and in the leadership over these enterprises by several Sovnarkhozs, by serious delays in approving plans for collecting tools and by insufficient material-technological supply for plants. Because of the late distribution of funds, orders for chemical equipment production last year were given out in the

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New Machinery for the Chemical Industry (cont'd)

middle of the year, although it was obvious that plant preparation for fulfillment of the new orders would take quite a long time. Supplying of plants with materials and auxiliary equipment was also unsatisfactory.

These serious shortcomings have not been eliminated this year. The state committee on chemistry is not providing finished plans on schedule and is giving out orders for equipment on tentative data, and therefore frequently changes these orders. The chemical machinery construction industry is poorly supplied with metal. In particular, not enough money has been allotted for sheet stainless steel and light gauge stainless parts.

The resolution of the July Plenum of the Central Committee of the CPSU emphasized the great advantages which broad application of standard plans as well as standardization of components and equipment will give to industry. Some work in this line has been done also in a chemical machinery construction industry. However, standardized and unified components and parts have not won the firm position

New Machinery for the Chemical Industry (cont'd)

in this branch of industry as they should. Verification of 2200 orders for equipment received by the USSR State Planning Commission have shown that a small porportion of the plans, upon which these orders are based, were drawn up on existing norms. At the same time no less than 85% of them can and should be fulfilled through use of nommalized and standard equipment. This would cut down on work in designing bureaus and save 3.5 million rubles.

New enterprises should be equipped with the most modern technology, however, in spite of the successful works in this area by many enterprises and scientific-design organizations, new technology is being introduced slowly into the chemical industry. Last years task for equipping chemical machinery construction enterprises with new technology was not fulfilled. Several Sovnaikhozes, including the Leningrad, Kharkov, and Kalined, are very slowly solving the problems of producing models of new instruments and equipment. The development of plans and blueprints, test models of new equipment and instruments is being delayed.

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New Machinery for the Chemical Industry (cont'd)

The directing organs of the machine construction industry do not always solve the problems of introducing new technology in a business like manner. The All-Union Scientific-Research Electro-mechanical Institute, for example, last year was supposed to design and produce 20 models of new type electric motors for the chemical industry. This task was not fulfilled. However, the National Committee for Automation and Machine Construction, under whose supervision the institute operates, has not yet been able to compel it to undertake this work as it should.

Cases are quite common where the deadlines for development and production of new models of instruments and equipment are arbitrarily put off without taking the needs and interests of the chemical industry into consideration.

Machine builders are still producing very little equipment for the complex mechanism automation of chemical plants. As a result, some chemical enterprises operate new machinery side by side with old, obsolete machinery, and use manual labor side by side with automation. For example, the Moscow Plant Krasnyy Bagatyr' is right now using elec-

New Machinery for the Chemical Industry (cont'd)

tronically operated machinery along side of the heavy manual labor.

Some enterprises are producing low quality machinery and equipment. The workers of the chemical industry are making many complaints about the products of the Bol'shevik Plant of the Kiev Sovnarkhoz. The quality of the gummed filters produced by the Uralkhimmash is causing much dissatisfaction.

The chemical machinery construction industry feels the need for many modern materials, in particular, double-layer steel, which would lower the cost of equipment operating in harmful surroundings without lowering the quality. The production of this type of steel is being introduced very slowly. At the same time, the machinery builders sometimes very timidly approach the introduction of some new and inexpensive materials, for example, welded and enameled pipes, and prefabricated reinforced concrete with rust proof covering. (Pravda, 30 August 1960. Partial translation).

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STEEL AND METALLURGY

New Technical Innovations

Bringing to light the historical decision of the Twenty-first Congress of the CPSU, the collective of the Irkutsk Heavy Machine Construction Plant imeni Kuybysheva of the Order of the Red Banner of Labor, is producing more and more new machinery. This machinery is aiding in smelting and rolling metal, extracting gold and diamonds, mining coal and various ores, transporting finished products, and carrying out many operations in the chemical industry.

Here are a few of the technological innovations created at our plant. Recently the first electric drag with 250 liter capacity scoops with a scooping depth of 12 meters was produced. Based on the earlier 210 liter model, the new drag is almost 40% more productive than its predecessor. Its more modern equipment has caused a much lower expenditure of electricity in processing gold-bearing sands.

For enterprises of the non-ferrous metallurgical industry, the Irkutsk machinery builders have developed and

New Technical Innovations (cont'd)

built original equipment for semi-continuous and continuous pouring of copper and brass. The first of these metals have already been shipped to the Balkhash, Artemovskiy and Kamen-skural'sk Plants and have not only resulted in the perfection of labor consuming processes of metal pouring but have saved many millions of rubles.

New wire drawing equipment has been produced for the Transcaucasus Metallurgical and the Ural'sk Novotrubnyy Plants as well as for the Chinese People's Republic.

The technical innovations include an air heater for the Urals most powerful blast furnaces with a capacity of 2700 cubic meters, condensers with peripheral feeds with a cup diameter of 50-75 and 100 liters, and several others.

A remarkable product of the Irkutsk Machinery Construction Plant is the gigantic electric drag with 600 liter scoops and a scoop depth of 50 meters. This is the world's largest floating gold plant and can process about 2,000,000 cubic meters of gold-bearing sands per year. It will replace 12,000 workers. It is almost a half of

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New Technical Innovations (cont'd)

kilometer long and as high as a thirteen-story building. Modern automatic, electronic, and television equipment will allow this drag to be operated by a ten man crew.

A no less interesting innovation will be the 120 meter automatic belt line for producing calibrated rods. Made up of several special machine tools, this line automatically calibrates, corrects and cuts rods, as well as checks for crookedness, errors in diameter, material hardness and surface defects. (Trud, 27 August 1960. Partial translation).

MISCELLANEOUS

Artificial Climate Apparatus

The Tallin Teras Machinery Construction Plant has developed an "artificaal climate apparatus" which permits a twenty-fold increase in the speed of testing construction materials. (Komsomol'skaya Pravda, 26 August 1960.

New Steel Cutting Aggregate

The machinery builders of the Staro-Kramatorsk Plant have produced an aggregate for cross cutting steel strips ahead of schedule for the great mill under construction, the 1700, being put up at the Zhdanovskiy Plant imeni Il'icha. This complex consists of 34 machines weighing 1½ thousand tons. The aggregate will be serviced by one half as many persons as previously. (Ekonomicheskaya Gazeta, 30 August 1960. Full translation).

### Pipe Welding Mills

The electro-steel heavy machine construction plant working with the Institute imeni V. P. Vologdini, is producing the world's first 320 pipe welding mills. They will be put into operation at the beginning of next year at the Chelyabinsk Pipe Rolling Plant.

The welding laboratory is the heart of the institute. Here was born the idea of welding pipes by induction heating. Right now the Soviet Union's first turbo-electric welding mill, the 10-60, operating on this principle, has been set up at the Leningrad Trubostal' Plant. The mill has eliminated many heavy operations and has replaced open welding. The pipe, formed of steel ribbon, enters special components in a cold state. The edges are heated by the induction method. In one minute the mill puts out thousands of meters of pipe with a diameter of up to 60 millimeters. The yearly savings from using this method on one mill alone will come to millions of rubles. If several mills are set up and the speed of pipe production is increased to 60 meters, savings will truly be tremendous. The 10-60 mill of

### Pipe Welding Mills (cont'd)

the Moscow Pipe Plant has been reequipped for producing contact weld pipes with high frequency currents. The frequencies are the same as used in communications. Welding speed by radio frequency currents can achieve 100-120 meters per minute. This is 30 - 40 times more than by the argon-arc. In order to produce the same quantity of pipe with the argon-arc welding method, 30 times more personnel and production space are required. (Leningradskaya Pravda, 11 August 1960. Partial translation).

Laymen Designers

On the example of the man from Sverdlovsk about 60 social design-technological bureaus and economic analysis bureaus have already been set up at the tractor-motor vehicle-motorbike- and bearing plants, at the Automated Line Plant and others. More than 500 workers, foremen, technicians, economists, and engineers are participating in this project.

On the initiative of the Party Committee at the Tractor Plant a general plant council for coordinating the activities of the social-design bureau has been set up, and the work of the design bureaus has been laid out on a broad social base. They have been set up in all large shops. Life has dictated the expansion of the framework of their activities, the attraction to participation in the development of proposals by laymen efficiency experts and inventors, plans for mechanization and automation not only of designers, but by technologists. Even working out efficiency proposals, the bench workers and specialists are not limited by design projects, but draw up in addition the

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Laymen Designers (cont'd)

technological process for producing the equipment and plan the equipment and tools for themselves. That is why this organization is now called the Social-Design Technological Bureau.

The social-Design Technological Bureau of the Press Shop, for instance, includes three designers, four technologists, two bench workers and a foreman. In their spare time they have developed and introduced more than 10 large scale efficiency proposals. Their proposals have resulted in changes in the technological processes of cold punching, and the plans for cold punches have been collected. This has saved 18,000 rubles. The production of protection section sheets from production discards has resulted in savings of 70,000 rubles, and a change in the technology of producing of oil carter netting and upper cabin facing have saved 118,000 rubles.

At the motorbike plant a bureau has been set up in the main technologists department. During their free time specialists, together with production innovators, are developing the necessary equipment for introducing valuable

Laymen Designers (cont'd)

proposals and organizational-technical measures and are developing new technology. Fourteen efficiency proposals have been worked out recently, some of which have already been incorporated in production. A design and technological development is being undertaken on 11 more proposals.

The Minsk Party City Committee recently conducted a seminar of social-design bureau and social-design and technical bureau managers. The first steps in the work of the social-design and design-technological bureaus were also discussed in the City Party Committee office. Practical measures were brought forth for the universal distribution of the experience of leading collectives and for the attraction to active technological creation of as large a number of production innovators, engineers, foremen, and economists as possible. (Ekonomicheskaya Gazeta, 14 August 1960. Full translation).